

Name \_\_\_\_\_

Period \_\_\_\_\_

# Behavior of Waves

1. Write the main idea of each topic.

Wave Interactions		
Topic	Main Idea	Draw a picture of each topic
Reflection		
Refraction		
Diffraction		
Constructive Interference		
Destructive Interference		

## Reflection

2. Is the following sentence true or false? (circle one - *If it is false change it to make it true*).

Reflection occurs when a wave bounces off a surface that it cannot pass through.

## Refraction

3. Why does refraction occur when a wave enters a new medium at an angle?

4. Is the following sentence true or false? (circle one - *If it is false change it to make it true*).

Refraction always involves a change in the speed and direction of a wave.

## Diffraction

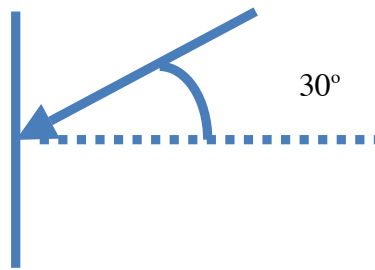
5. What is required in order for diffraction to occur?

6. What determines how much a wave diffracts when it encounters an opening or an obstacle?

7. Is the following sentence true or false? (circle one - *If it is false change it to make it true*).

A wave diffracts more if its wavelength is small compared to the size of an opening or obstacle.

## REFLECTION:



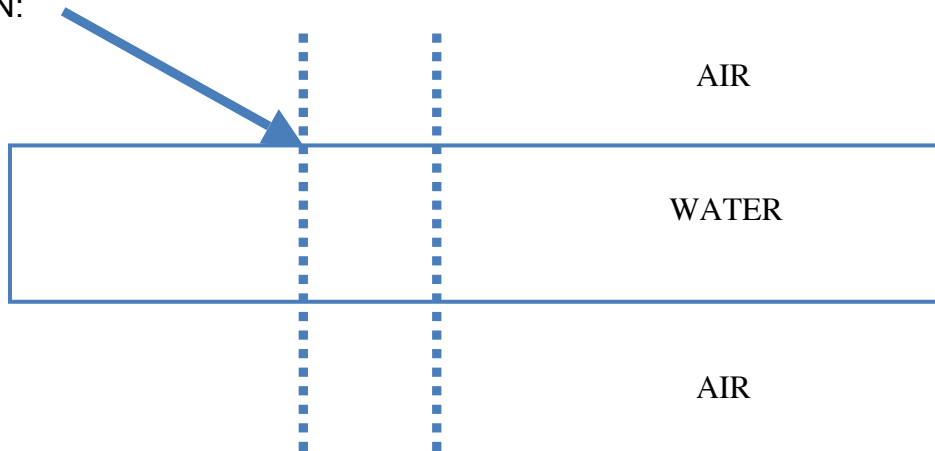
Above is a diagram showing an incident ray going towards a mirror. When it hits the mirror it will be reflected.

8. Draw the ray of reflection

9. Label the angle of incidence and the angle of reflection

10. Determine the measure of the angle of reflection \_\_\_\_\_

## REFRACTION:



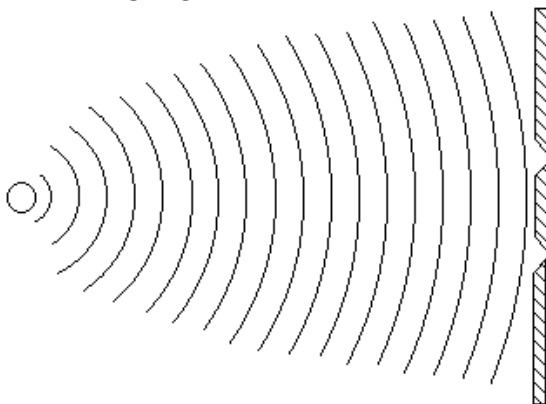
Above is a diagram showing an incident ray going from air into water. The ray will slow down and bend.

11. Draw the refracted ray as the ray slows down upon entering the more dense water.

12. Draw the refracted ray as the ray speeds up upon reentering the less dense air.

13. Draw and label the angle of incidence and the angles of refraction.

## DIFFRACTION:



Above is a diagram showing a wave as it approaches an obstacle containing two slits, the wave will bend and pass through the slits.

14. Draw the resulting wave(s) on the opposite side of the obstacle

15. CIRCLE one position where constructive interference is occurring between the new waves.

16. SQUARE one position where destructive interference is occurring between the new waves.